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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,277	03/14/2001	Andrew M. Warwick	GB 000029	3110

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BRIARCLIFF MANOR, NY 10510

EXAMINER

ROSE, KIESHA L

ART UNIT PAPER NUMBER

2822

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/808,277	Applicant(s) WARWICK, ANDREW M.	
	Examiner Kiesha L. Rose	Art Unit 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the RCE filed 25 February 2004.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1 and 3-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Okumura (U.S. Patent 6,265,744).

Okumura discloses a semiconductor device (Figs. 7a and 9) that contains a semiconductor body having an active cell area wherein striped shaped trenches (29), containing gate material (33) and an insulating layer (31) provided between gate material (33) and semiconductor body, extend into the semiconductor body from a surface thereof, where adjacent to the trenches (29) are source regions (25) of the first conductivity type separated from a drain region (21) by a channel accommodating body region (23) of a second conductivity type and a source electrode (41) that contacts the source region (25), where the active cell area has a network of connected trenches (29)

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with a source region (25) in each cell and the trenches (29) extend beyond the active cell area to an inactive cell area where the source region (25) is not present, the inactive cell area contains a gate electrode contact area (43) and a gate bond pad (51) that contacts the gate material (33) on the whole area of the trenches and the semiconductor body, where the semiconductor body in the inactive cell area has a first region (27) of first conductivity type and an underlying second region (23) with a second conductivity type, which is continuous with the channel accommodating body region, that are provided as isolated cells surrounded by a network of connected trenches and some of the isolated cells in the inactive cell area nearest to the active cell area are linking cells across the inactive and active cell area that provides voltage protection diodes between the gate and source electrodes (43/41) and a patterned insulating layer (35) is provided on the semiconductor body wherein in the active cell area the insulating layer provides an insulating overlayer on the trenches (29) and has windows where the source electrode (41) contacts the source regions (25) and wherein in the inactive cell area a window in the insulating layer provides the gate electrode contact area (43), where the underlying second region extends to the semiconductor body surface at an area between the source region of each linking cell and the first region of the linking cell, at which area of the underlying second region is contacted by the source electrode.

Response to Arguments

Applicant's arguments filed 24 December 2003 have been fully considered but they are not persuasive. Applicant argues that the Okumura reference does not disclose

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the linking cells provided across the inactive and active areas and that the source electrode does not contact the base region. As stated previously the Okumura reference does disclose that the source electrode does not contact the base region or the source regions. As can be seen in Fig. 7, the source electrode does contact the portion P of the base region (23), which can be clearly seen everywhere the insulation film is not located, in addition the source electrode is contacting the source regions also as is seen on the left side of the figure between the insulation films. Therefore the source electrode does contact the base regions (underlying second region). In addition the claim states that there are linking cells where the linking cell contacts the gate electrode and the source electrode contacts the source region and the new limitation that the source electrode contacts the underlying second region. The Okumura reference discloses these three limitations and is not only limited to the P region but to them contacting the source regions, gate electrode and underlying second region. Therefore the rejection stands.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiesha L. Rose whose telephone number is 571-272-1844. The examiner can normally be reached on M-F 8:30-6:00 off 2nd Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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KLR


AMIR ZARABIAN
ASSISTANT PATENT EXAMINER
COMMUNITY CENTER 2800